

A.2
N/D

August 1996 Upper Aquifer Monitoring Well

Data Evaluation and Comparison

American Chemical Services

Introduction

Black & Veatch Special Projects Corp. (BVSPC), under the Alternative Remedial Contracting Strategy, has been tasked by the U.S. Environmental Protection Agency (USEPA) to provide field oversight during the remedial design and expedited remedial action to USEPA Region V in their endeavor to complete remediation of the American Chemical Services site. The Respondents are the ACS Technical Committee, and their contractor is Montgomery Watson.

Purpose

The purpose of this document is to present BVSPC's evaluation and comparison of split sample analytical results with Montgomery Watson's data. BVSPC representatives collected nine split samples during sampling of Upper Aquifer monitoring wells by Montgomery Watson.

Sampling Effort

From August 5 to 7, 1996, nine split samples were collected during the field oversight. Corresponding USEPA Contract Laboratory Program (CLP) numbers are shown in Table 1. Sampling was performed in accordance with the USEPA-approved field sampling plan and quality assurance project plan.

Laboratory

The USEPA split samples were analyzed by CLP analytical services in accordance with the procedures outlined in the User's Guide to the CLP, USEPA, February 1995. USEPA Region V Central Regional Laboratory (CRL), Chicago, Illinois, analyzed the samples.

Montgomery Watson's samples were analyzed by IEA for organic analyses and Montgomery Watson Laboratories for inorganic analyses.

Data Validation

USEPA Region V CRL and BVSPC validated split sample data using the USEPA CLP National Functional Guidelines for Organic Data Review (EPA 540/R-



94/012, February 1994) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA 540/R-94/013, February 1994). Montgomery Watson provided narratives to explain their validation of the data analyzed by their laboratories. Montgomery Watson stated that they also used these USEPA CLP guidelines for organic and inorganic data review.

The USEPA split sample analytical results were acceptable; however, due to minor analytical quality control problems, some of the compounds/analytes were qualified. Appendix A is a copy of raw data sheets from USEPA for split samples, including data validation and case narratives. Qualifiers are fully explained in the narratives.

Montgomery Watson reported that the overall data quality by the laboratories was good with no significant instrument problems and the calculations were acceptable. Appendix B is a copy of raw data sheets for the Montgomery Watson data.

Data Comparison

BVSPC reviewed the validated data and compared it to the Montgomery Watson's data. Table 1 presents the Upper Aquifer monitoring well sample data comparison. Both data sets were consistent except for the following:

- Montgomery Watson assigned an R (unusable) qualifier to several volatile organic compounds, including acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone, because the reference factor was less than 0.05.
- Several additional volatile organic compounds (approximately 23) and semivolatile organic compounds (approximately 2) were analyzed for by CRL that were not analyzed by IEA.
- The Montgomery Watson samples were not analyzed for pesticides or cyanide.
- Montgomery Watson's data used a higher detection limit for the PCB analyses.

Volatile Organic Compounds

- MW37. IEA reported one J-qualified compound (benzene) that CRL reported as non-detect.
- MW38. CRL reported one J-qualified compound (benzene) that IEA reported as non-detect.
- MW42. CRL reported benzene as $2 \mu\text{g/L}$, but IEA data indicated non-detect.
- MW44. Comparable results.

MW45. IEA used a 25 times dilution, which may have masked the presence of five compounds (refer to Table 1) that were detected in the USEPA split sample. Five compounds, detected in the USEPA split sample, were not analyzed for in the Montgomery Watson sample. IEA reported 2 tentatively identified compounds (TICs), but CRL data indicated 5 TICs. Five compounds were reported by both laboratories:

<u>Compound</u>	<u>IEA ($\mu\text{g}/\text{L}$)</u>	<u>CRL ($\mu\text{g}/\text{L}$)</u>
Chloroethane	110 D	82 J
Benzene	510 D	530
Chlorobenzene	15	16 J
Ethylbenzene	12	10 J
Xylenes (total)	60	57 D

MW46. IEA reported two J-qualified compounds (vinyl chloride and 4-methyl-2-pentanone) that CRL reported as non-detect. IEA reported benzene as 0.8 J $\mu\text{g}/\text{L}$, but CRL data indicated 2 $\mu\text{g}/\text{L}$. IEA reported no TICs, but CRL data indicated 2 TICs.

MW47. CRL reported benzene as 2 $\mu\text{g}/\text{L}$, but IEA reported non-detect.

MW48. IEA used a 500 times dilution, which may have masked the presence of three compounds (refer to Table 1) that were detected in the USEPA split sample. IEA reported no TICs, but CRL data indicated 2 TICs. Three compounds were reported by both laboratories:

<u>Compound</u>	<u>IEA ($\mu\text{g}/\text{L}$)</u>	<u>CRL ($\mu\text{g}/\text{L}$)</u>
Chloroethane	1,200 D	1,000
Methylene chloride	4	70 J
Benzene	10,000 DJ	9,100

MW49. IEA used a 500 times dilution, which may have masked the presence of eleven compounds (refer to Table 1) that were detected in the USEPA split sample. Two compounds were reported by both laboratories:

<u>Compound</u>	<u>IEA ($\mu\text{g}/\text{L}$)</u>	<u>CRL ($\mu\text{g}/\text{L}$)</u>
Chloroethane	640 D	480 J
Benzene	6,400 DJ	5,000

Semivolatile Organic Compounds

- MW37. CRL reported bis(2-ethylhexyl)phthalate as 2 BJ $\mu\text{g}/\text{L}$, but IEA data indicated non-detect.
- MW38. CRL reported bis(2-ethylhexyl)phthalate as 2 BJ $\mu\text{g}/\text{L}$, but IEA data indicated non-detect. IEA reported 1 TIC, but CRL data indicated 2 TICs.
- MW42. CRL reported phenol as 21 $\mu\text{g}/\text{L}$, bis(2-chloroethyl)ether as 2 J $\mu\text{g}/\text{L}$, and bis(2-chloroisopropyl)ether as 5 J $\mu\text{g}/\text{L}$, but IEA data indicated non-detect. CRL reported bis(2-ethylhexyl)phthalate as 2 BJ $\mu\text{g}/\text{L}$, but IEA data indicated 4 J $\mu\text{g}/\text{L}$. IEA reported no TICs, but CRL data indicated 5 TICs.
- MW44. CRL reported bis(2-ethylhexyl)phthalate as 3 BJ $\mu\text{g}/\text{L}$, but IEA data indicated non-detect.
- MW45. IEA used a 2 times dilution, which may have masked the presence of four compounds (refer to Table 1) that were detected in the USEPA split sample. CRL reported phenol as 24 $\mu\text{g}/\text{L}$, but IEA data indicated 41 $\mu\text{g}/\text{L}$. CRL reported bis(2-chloroethyl)ether as 6 $\mu\text{g}/\text{L}$, but IEA data reported 7 J $\mu\text{g}/\text{L}$. CRL reported naphthalene as 52 $\mu\text{g}/\text{L}$, but IEA data indicated 84 $\mu\text{g}/\text{L}$. CRL reported 2-methylnaphthalene as 3 J $\mu\text{g}/\text{L}$, but IEA data indicated 4 J $\mu\text{g}/\text{L}$. CRL reported diethylphthalate as 1 J $\mu\text{g}/\text{L}$ and bis(2-ethylhexyl)phthalate as 2 BJ $\mu\text{g}/\text{L}$, but IEA data indicated non-detect. IEA reported 11 TICs, but CRL data indicated 16 TICs.
- MW46. CRL reported phenol as 2 J $\mu\text{g}/\text{L}$, but IEA data indicated non-detect. Two compounds (bis(2-chloroethyl)ether and 4-methylphenol) were reported by both laboratories as 3 J $\mu\text{g}/\text{L}$. CRL reported benzoic acid as 11 J $\mu\text{g}/\text{L}$, but IEA did not analyze for the compound. CRL reported bis(2-ethylhexyl)phthalate as 2 BJ $\mu\text{g}/\text{L}$, but IEA data indicated 3 J $\mu\text{g}/\text{L}$. IEA reported 11 TICs, but CRL data indicated 2 TICs.
- MW47. CRL reported bis(2-ethylhexyl)phthalate as 1 BJ $\mu\text{g}/\text{L}$, but IEA data indicated non-detect.
- MW48. IEA used a 2 times dilution, which may have masked the presence of one compound (bis(2-chloroethyl)ether) that was detected in the USEPA split sample. CRL reported phenol as 180 D $\mu\text{g}/\text{L}$, but IEA

data indicated 110 $\mu\text{g}/\text{L}$. IEA reported 2,6-dinitrotoluene as 0.9 J $\mu\text{g}/\text{L}$, but CRL reported non-detect. CRL reported bis(2-ethylhexyl) phthalate as 2 BJ $\mu\text{g}/\text{L}$, but IEA data indicated non-detect. IEA reported 20 TICs, but CRL data indicated 22 TICs.

- MW49. IEA used a 2 times dilution, which may have masked the presence of two compounds (bis(2-chloroethyl)ether and bis(2-chloroisopropyl) ether) that were detected in the USEPA split sample. CRL reported phenol as 59 $\mu\text{g}/\text{L}$, but IEA data indicated 93 $\mu\text{g}/\text{L}$. IEA reported isophorone as 1 J $\mu\text{g}/\text{L}$, but CRL reported non-detect. CRL reported bis(2-ethylhexyl)phthalate as 3 BJ $\mu\text{g}/\text{L}$, but IEA data indicated non-detect. IEA reported 16 TICs, but CRL data indicated 15 TICs.

PCBs

The PCB results from all USEPA samples and corresponding Montgomery Watson samples were non-detect.

Pesticides

Montgomery Watson did not request pesticides analyses for their samples. The USEPA split sample for MW48 contained p,p'-DDT (0.23 J $\mu\text{g}/\text{L}$).

Inorganic Analytes

Generally, the data are comparable. Several analytes in the Montgomery Watson data were qualified as B, but an explanation of the qualifier is not included with the data. BVSPC assumes the B qualifier indicates that the reported value is less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit.

Precision of the laboratory analyses was assessed by comparing the detected concentrations for each sample for organic and inorganic analysis. The relative percent difference (RPD) was calculated for each pair of results using the following equation:

$$RPD = \frac{P_c - D_c}{(P_c + D_c) / 2} \times 100$$

where:

P_c = Primary Concentration (assumed USEPA's data)

D_c = Duplicate Concentration (assumed Montgomery Watson's data)

Table 2 presents the sample variation comparison for organic and inorganic analyses. Compounds/analytes that exceeded the 30% RPD criteria included the following:

Methylene chloride
Benzene
4-Methyl-2-pentanone
Phenol
Naphthalene
Bis(2-ethylhexyl)phthalate
Aluminum
Arsenic
Barium
Lead

All other compounds/analytes were consistent, comparable, and within the 30% RPD range between USEPA and Montgomery Watson's data; however, BVSPC recommends that the detected compounds/analytes with higher concentrations should be viewed with caution.

Conclusions

The overall sample analytical results between USEPA and Montgomery Watson's data were comparable; however, differences in concentrations for some compounds/analytes between USEPA and Montgomery Watson's data were noted. These compounds/analytes should be viewed carefully in future sampling events.

Table 1

August 1996 Upper Aquifer Monitoring Well Sample Data Comparison

American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)									
	MW46		MW48		MW38		MW47		MW42	
	96ZB10S01 USEPA	PRP	96ZB10S02 USEPA	PRP	96ZB10S03 USEPA	PRP	96ZB10S04 USEPA	PRP	96ZB10S05 USEPA	PRP
Volatile Organic Compounds										
Chloromethane	1 U	0.6 UJ	1 U	500 U	1 U	0.8 UJ	1 U	0.5 UJ	1 U	1 U
Bromomethane	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	0.2 J	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1,200 D	1,000	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	1 U	2 U	4	70 J	1 U	0.3 UJ	1 U	0.3 UJ	1 U	2 U
Acetone	3 U	8 R	3 U	2,500 U	3 U	8 R	3 U	8 UR	3 U	6 R
Carbon disulfide	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
2,2-Dichloropropane	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
cis-1,2-Dichloroethene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	0.9 J	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	0.3 UJ	1 U	500 U	1 UJ	1 U	1 U	1 U	1 U	0.3 UJ
2-Butanone	3 U	5 UR	3 U	2,500 U	3 U	5 UR	3 U	5 UR	3 U	5 UR
Bromoform	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-trichloroethane	1 U	1 U	1 U	500 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	1 U	1 U	1 U	500 U	1 UJ	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
Bromodichloromethane	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-dichloropropene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	1 U	-	1 U	--	1 U	-	1 U	--	1 U	-
Dibromochloromethane	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	2	0.8 J	10,000 DJ	9,100	0.7 J	1 U	2	1 U	2	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	1 U	-	1 U	-	1 U	-	1 U	--	1 U	-
4-Methyl-2-pentanone	2 U	3 J	13	2,500 U	2 U	5 UR	2 U	5 UR	2 U	5 UR
2-Hexanone	2 UJ	5 UR	2 UJ	2,500 U	2 UJ	5 UR	2 UJ	5 UR	2 UJ	5 UR
Tetrachloroethene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	3	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 1-1

Table 1

August 1996 Upper Aquifer Monitoring Well Sample Data Comparison

American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)									
	MW46		MW48		MW38		MW47		MW42	
	96ZB10S01 USEPA	PRP	96ZB10S02 USEPA	PRP	96ZB10S03 USEPA	PRP	96ZB10S04 USEPA	PRP	96ZB10S05 USEPA	PRP
Xylene (total)	-	1 U	-	500 U	-	1 U	-	1 U	-	1 U
m- and/or p-Xylene	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
o-Xylene	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
1,3-Dichlorobenzene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropene	1 U	1 U	1 U	500 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
Bromobenzene	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
1,2,3-Trichloropropane	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
1,1,1,2-Tetrachloroethane	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
n-Propylbenzene	1 U	--	1 U	-	1 U	-	1 U	-	1 U	-
2-Chlorotoluene	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
4-Chlorotoluene	1 U	-	1 U	-	1 U	-	1 U	-	1 U	-
1,3,5-Trimethylbenzene	1 U	--	1 U	-	1 U	-	1 U	-	1 U	-
tert-Butylbenzene	1 U	--	1 U	-	1 U	-	1 U	--	1 U	-
1,2,4-Trimethylbenzene	1 U	--	1 U	--	1 U	-	1 U	-	1 U	-
sec-Butylbenzene	1 U	--	1 U	-	1 U	-	1 U	-	1 U	-
p-Isopropyltoluene	1 U	-	1 U	-	1 U	-	1 U	-	1 U	--
n-Butylbenzene	1 U	--	1 U	--	1 U	-	1 U	-	1 U	-
1,2,4-Trichlorobenzene	1 U	--	1 U	-	1 U	-	1 U	-	1 U	-
Naphthalene	1 U	-	1 U	-	1 U	-	1 U	--	1 U	-
Hexachlorobutadiene	1 U	--	1 U	--	1 U	--	1 U	--	1 U	-
1,2,3-Trichlorobenzene	1 U	--	1 U	--	1 U	-	1 U	-	1 U	-
VOA TICs	2	0	2	0	0	0	1	0	0	0
Semivolatile Organic Compounds										
Phenol	2 J	10 U	180 D	110	5 U	10 U	5 U	10 U	21	10 U
bis(2-Chloroethyl)ether	3 J	3 J	19	20 U	5 U	10 U	5 U	10 U	2 J	10 U
2-Chlorophenol	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
1,3-Dichlorobenzene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
1,4-Dichlorobenzene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Benzyl alcohol	5 U	--	5 U	-	5 U	--	5 U	-	5 U	-
1,2-Dichlorobenzene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2-Methylphenol	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
bis(2-Chloroisopropyl)ether	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 J	10 U
4-Methylphenol	3 J	3 J	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
N-Nitroso-di-n-propylamine	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Hexachloroethane	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Nitrobenzene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Isophorone	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U

Table 1-2

Table 1

August 1996 Upper Aquifer Monitoring Well Sample Data Comparison

American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)									
	MW46		MW48		MW38		MW47		MW42	
	96ZB10S01 USEPA	PRP	96ZB10S02 USEPA	PRP	96ZB10S03 USEPA	PRP	96ZB10S04 USEPA	PRP	96ZB10S05 USEPA	PRP
2-Nitrophenol	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2,4-Dimethylphenol	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Benzoic acid	11 J	--	20 U	--	20 U	--	20 U	--	20 U	--
bis(2-Chloroethoxy)methane	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2,4-Dichlorophenol	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
1,2,4-Trichlorobenzene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Naphthalene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
4-Chloroaniline	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Hexachlorobutadiene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
4-Chloro-3-methylphenol	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2-Methylnaphthalene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Hexachlorocyclopentadiene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2,4,6-Trichlorophenol	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2,4,5-Trichlorophenol	20 U	25 U	20 U	50 U	20 U	25 U	20 U	25 U	20 U	25 U
2-Chloronaphthalene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2-Nitroaniline	20 U	25 U	20 U	50 U	20 U	25 U	20 U	25 U	20 U	25 U
Dimethylphthalate	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Acenaphthylene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2,6-Dinitrotoluene	5 U	10 U	5 U	0.9 J	5 U	10 U	5 U	10 U	5 U	10 U
3-Nitroaniline	20 U	25 U	20 U	50 U	20 U	25 U	20 U	25 U	20 U	25 U
Acenaphthene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2,4-Dinitrophenol	20 U	25 U	20 U	50 U	20 U	25 U	20 U	25 U	20 U	25 U
4-Nitrophenol	20 U	25 U	20 U	50 U	20 U	25 U	20 U	25 U	20 U	25 U
Dibenzofuran	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
2,4-Dinitrotoluene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Diethylphthalate	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
4-Chlorophenyl-phenylether	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Fluorene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
4-Nitroaniline	20 U	25 U	20 U	50 U	20 U	25 U	20 U	25 U	20 U	25 U
4,6-Dinitro-2-methylphenol	20 U	25 U	20 U	50 U	20 UJ	25 U	20 UJ	25 U	20 UJ	25 U
N-Nitrosodiphenylamine	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
4-Bromophenyl-phenylether	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Hexachlorobenzene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Pentachlorophenol	20 U	25 U	20 U	50 U	20 U	25 U	20 U	25 U	20 U	25 U
Phenanthrene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Anthracene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Carbazole	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Di-n-butylphthalate	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Fluoranthene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Pyrene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U

Table 1-3

Table 1
August 1996 Upper Aquifer Monitoring Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)									
	MW46		MW48		MW38		MW47		MW42	
	96ZB10S01 USEPA	PRP	96ZB10S02 USEPA	PRP	96ZB10S03 USEPA	PRP	96ZB10S04 USEPA	PRP	96ZB10S05 USEPA	PRP
Butylbenzylphthalate	5 U	10 U	5 U	20 U	5 UJ	10 U	5 UJ	10 U	5 UJ	10 U
3,3'-Dichlorobenzidine	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Benzo(a)anthracene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Chrysene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
bis(2-Ethylhexyl)phthalate	2 BJ	3 J	2 BJ	20 U	2 BJ	10 U	1 BJ	10 U	2 BJ	4 J
Di-n-octylphthalate	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Benzo(b)fluoranthene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Benzo(k)fluoranthene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Benzo(a)pyrene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Indeno(1,2,3-cd)pyrene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Dibenzo(a,h)anthracene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
Benzo(g,h,i)perylene	5 U	10 U	5 U	20 U	5 U	10 U	5 U	10 U	5 U	10 U
SVOA TICs	2	11	22	20	2	1	1	1	5	0
Pesticides										
Alpha-BHC	0.01 UJ	--	0.01 U	--						
Lindane	0.01 UJ	--	0.01 U	--						
Heptachlor	0.01 UJ	--	0.01 U	--						
Aldrin	0.01 UJ	--	0.01 U	--						
Heptachlor Epoxide	0.01 UJ	--	0.01 U	--						
Endosulfan I	0.01 UJ	--	0.01 U	--						
Dieldrin	0.02 UJ	--	0.02 U	--						
Endrin	0.02 UJ	--	0.02 U	--						
Endosulfan II	0.02 UJ	--	0.02 U	--						
p,p'-DDT	0.02 UJ	--	0.23 J	--	0.02 U	--	0.02 U	--	0.02 U	--
Methoxychlor	0.1 UJ	--	0.1 U	--						
Beta-BHC	0.01 UJ	--	0.01 U	--						
Delta-BHC	0.01 UJ	--	0.01 U	--						
Gamma-chlordane	0.01 UJ	--	0.01 U	--						
Alpha-chlordane	0.01 UJ	--	0.01 U	--						
p,p'-DDE	0.02 UJ	--	0.02 U	--						
p,p'-DDD	0.02 UJ	--	0.02 U	--						
Endrin Aldehyde	0.02 UJ	--	0.02 U	--						
Endosulfan Sulfate	0.02 UJ	--	0.02 U	--						
Endrin Ketone	0.02 UJ	--	0.02 U	--						
Technical Chlordane	0.2 UJ	--	0.2 U	--						
Toxaphene	1.0 UJ	--	1.0 U	--						
PCBs										
Aroclor 1016	0.2 UJ	1.0 U	0.2 U	1.0 U						
Aroclor 1221	0.2 UJ	2.0 U	0.2 U	2.0 U						
Aroclor 1232	0.2 UJ	1.0 U	0.2 U	1.0 U						

Table 1-4

Table 1

August 1996 Upper Aquifer Monitoring Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)							
	MW46		MW48		MW38		MW47	
	96ZB10S01 USEPA	PRP	96ZB10S02 USEPA	PRP	96ZB10S03 USEPA	PRP	96ZB10S04 USEPA	PRP
Aroclor 1242	0.2 UJ	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Aroclor 1248	0.2 UJ	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Aroclor 1254	0.2 UJ	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Aroclor 1260	0.2 UJ	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Inorganic Analytes								
Aluminum	583	821	355	254 U	80 U	118 UB	215	383 U
Antimony	1 U	2.0 U	1 U	2.0 U	1 U	2.0 U	1 U	2.0 U
Arsenic	2	3.7 B	6	11.3	2	3.9 B	2 U	1.0 U
Barium	145	132 B	166	160 B	40.2	36.5 B	6	10.0 B
Beryllium	1 U	0.20 U	1 U	0.20 U	1 U	0.20 UJN	1 U	0.20 UJN
Cadmium	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U
Calcium	120,000	115,000	140,000	142,000	64,700	63,500	8,460	8,530
Chromium	10 U	10.0 U	11.3 J	10.0 U	10 U	10.0 U	10 U	10.0 U
Cobalt	6 U	10.0 U	6 U	10.0 U	6 U	10.0 U	6 U	10.0 U
Copper	8.9	13.0 UB	8.1	13.5 UB	6 U	12.0 UB	6 U	15.0 UB
Iron	22,700	21,700 J*	32,200	30,800 J*	6,570	6,440 J	187	254 UJ*
Lead	3	5.0 US	2 U	3.4 US	3	1.5 U	18	23.0 S
Magnesium	31,000	30,500	18,700	20,100	21,600	22,000	2,830	2,360 B
Manganese	1,560	1,510 JE*	581	688 JE*	519	511 JE*	24.8	27.0 JE*
Mercury	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U
Nickel	20 U	20.0 UJ*	21.9	20.0 UJ*	20 U	20.0 U	20 U	20.0 U
Potassium	5,000 U	1,450 B	7,820	7,560 B	5,000 U	494 B	5,000 U	1,090 B
Selenium	20 U	2.0 U	6 U	2.0 US	4 U	2.0 U	2 U	2.0 U
Silver	6 U	10.0 U	6 U	10.0 U	6 U	10.0 U	6 U	10.0 U
Sodium	72,000	62,200	56,600	52,100	5,780	5,130	3,330	3,020 B
Thallium	2 U	1.0 U	2 U	1.1 B	2 U	1.0 U	2 U	1.0 U
Vanadium	5 U	20.0 U	5 U	20.0 U	5 U	20.0 U	5 U	20.0 U
Zinc	40 U	10.0 U	40 U	10.0 U	40 U	10.0 U	40 U	10.0 U
Cyanide	8 U	--	8 U	--	8 U	--	8 U	--

Table 1-5

Table 1
August 1996 Upper Aquifer Monitoring Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)							
	MW49		MW45		MW37		MW44	
	96ZB10S06 USEPA	PRP	96ZB10S07 USEPA	PRP	96ZB09S08 USEPA	PRP	96ZB09S09 USEPA	PRP
Volatile Organic Compounds								
Chloromethane	1 U	500 U	1 U	25 U	1 U	0.9 UJ	1 U	1 UJ
Bromomethane	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 J	500 U	1 J	25 U	1 U	1 U	1 U	1 U
Chloroethane	640 D	480 J	110 D	82 J	1 U	1 U	1 U	1 U
Methylene chloride	1	70 UJ	0.9 J	50 U	1 U	2 U	1 U	2 U
Acetone	3 U	2,500 UR	3 U	170 R	3 U	5 UR	3 U	5 UR
Carbon disulfide	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2	500 U	1 U	25 U	1 U	1 U	1 U	1 U
2,2-Dichloropropane	1 U	-	1 U	-	1 U	-	1 U	-
cis-1,2-Dichloroethene	0.8 J	500 U	1 U	25 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	8	500 U	2	25 U	1 U	1 U	1 U	1 U
Chloroform	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	500 U	1 U	25 UJ	1 U	0.2 UJ	1 UJ	1 UJ
2-Butanone	3 U	2,500 UR	3 U	120 UR	3 U	5 UR	3 U	5 UR
Bromoform	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,1,1-trichloroethane	1 U	500 U	1 U	25 U	1 U	1 U	1 UJ	1 U
Carbon tetrachloride	1 U	500 U	1 U	25 U	1 U	1 U	1 UJ	1 U
1,1-Dichloropropene	1 U	-	1 U	-	1 U	-	1 U	-
Bromodichloromethane	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,2-Dichloropropene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
cis-1,3-dichloropropene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
Dibromomethane	1 U	--	1 U	-	1 U	-	1 U	-
Dibromochloromethane	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
Benzene	6,400 DJ	5,000	510 D	530	1 U	0.1 J	1 U	1 U
trans-1,3-Dichloropropene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
Bromoform	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	1 U	-	1 U	-	1 U	-	1 U	-
4-Methyl-2-pentanone	3	2,500 UR	2 U	120 U	2 U	5 UR	2 U	5 U
2-Hexanone	2 UJ	2,500 UR	2 UJ	120 U	2 UJ	5 UR	2 UJ	5 U
Tetrachloroethene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
Toluene	2	500 U	1 U	25 U	1 U	1 U	1 U	1 UJ
Chlorobenzene	0.5 J	500 U	15	16 J	1 U	1 U	1 U	1 U
Ethylbenzene	1	500 U	12	10 J	1 U	1 U	1 U	1 U
Styrene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U

Table 1-6

Table 1
August 1996 Upper Aquifer Monitoring Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)							
	MW49		MW45		MW37		MW44	
	96ZB10S06 USEPA	PRP	96ZB10S07 USEPA	PRP	96ZB09S08 USEPA	PRP	96ZB09S09 USEPA	PRP
Xylene (total)	-	500 U	-	60	-	1 U	-	1 U
m- and/or p-Xylene	0.8 J	-	54 D	--	1 U	-	1 U	--
o-Xylene	0.6 J	-	3	-	1 U	-	1 U	-
1,3-Dichlorobenzene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	500 U	2	25 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	500 U	4	25 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropene	1 U	500 U	1 U	25 U	1 U	1 U	1 U	1 U
Isopropylbenzene	1 U	-	15	--	1 U	-	1 U	-
Bromobenzene	1 U	--	1 U	--	1 U	--	1 U	-
1,2,3-Trichloropropane	1 U	-	1 U	--	1 U	-	1 U	-
1,1,1,2-Tetrachloroethane	1 U	--	1 U	--	1 U	-	1 U	-
n-Propylbenzene	1 U	-	11	-	1 U	-	1 U	-
2-Chlorotoluene	1 U	--	1 U	--	1 U	-	1 U	-
4-Chlorotoluene	1 U	--	1 U	--	1 U	--	1 U	--
1,3,5-Trimethylbenzene	1 U	-	15	--	1 U	--	1 U	-
tert-Butylbenzene	1 U	--	1 U	-	1 U	-	1 U	-
1,2,4-Trimethylbenzene	1 U	--	190 D	--	1 U	-	1 U	-
sec-Butylbenzene	1 U	-	1 U	--	1 U	-	1 U	-
p-Isopropyltoluene	1 U	-	1 U	--	1 U	-	1 U	--
n-Butylbenzene	1 U	--	1 U	--	1 U	-	1 U	-
1,2,4-Trichlorobenzene	1 U	-	1 U	--	1 U	-	1 U	-
Naphthalene	1 U	--	91 D	-	1 U	--	1 U	-
Hexachlorobutadiene	1 U	--	1 U	--	1 U	--	1 U	-
1,2,3-Trichlorobenzene	1 U	--	1 U	--	1 U	-	1 U	-
VOA TICs	0	0	5	2	0	0	0	0
Semivolatile Organic Compounds								
Phenol	59	93	24	41	5 U	10 U	5 U	10 U
bis(2-Chloroethyl)ether	5	20 U	6	7 J	5 U	10 U	5 U	10 U
2-Chlorophenol	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
1,3-Dichlorobenzene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
1,4-Dichlorobenzene	5 U	20 U	2 J	20 U	5 U	10 U	5 U	10 U
Benzyl alcohol	5 U	-	5 U	-	5 U	-	5 U	-
1,2-Dichlorobenzene	5 U	20 U	3 J	20 U	5 U	10 U	5 U	10 U
2-Methylphenol	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
bis(2-Chloroisopropyl)ether	13 J	20 U	5 J	20 U	5 U	10 U	5 U	10 U
4-Methylphenol	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
N-Nitroso-di-n-propylamine	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Hexachloroethane	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Nitrobenzene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Isophorone	5 U	1 J	5 U	20 U	5 U	10 U	5 U	10 U

Table 1-7

Table I
August 1996 Upper Aquifer Monitoring Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)							
	MW49		MW45		MW37		MW44	
	96ZB10S06 USEPA	PRP	96ZB10S07 USEPA	PRP	96ZB09S08 USEPA	PRP	96ZB09S09 USEPA	PRP
2-Nitrophenol	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2,4-Dimethylphenol	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Benzoic acid	20 U	-	20 U	-	20 U	-	20 U	--
bis(2-Chloroethoxy)methane	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2,4-Dichlorophenol	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
1,2,4-Trichlorobenzene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Naphthalene	5 U	20 U	52	84	5 U	10 U	5 U	10 U
4-Chloroaniline	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Hexachlorobutadiene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
4-Chloro-3-methylphenol	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2-Methylnaphthalene	5 U	20 U	3 J	4 J	5 U	10 U	5 U	10 U
Hexachlorocyclopentadiene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2,4,6-Trichlorophenol	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2,4,5-Trichlorophenol	20 U	50 U	20 U	50 U	20 U	25 U	20 U	25 U
2-Chloronaphthalene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2-Nitroaniline	20 U	50 U	20 U	50 U	20 U	25 U	20 U	25 U
Dimethylphthalate	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Acenaphthylene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2,6-Dinitrotoluene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
3-Nitroaniline	20 U	50 U	20 U	50 U	20 U	25 U	20 U	25 U
Acenaphthene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2,4-Dinitrophenol	20 U	50 U	20 U	50 U	20 U	25 U	20 U	25 U
4-Nitrophenol	20 U	50 U	20 U	50 U	20 U	25 U	20 U	25 U
Dibenzofuran	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
2,4-Dinitrotoluene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Diethylphthalate	5 U	20 U	1 J	20 U	5 U	10 U	5 U	10 U
4-Chlorophenyl-phenylether	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Fluorene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
4-Nitroaniline	20 U	50 U	20 U	50 U	20 U	25 U	20 U	25 U
4,6-Dinitro-2-methylphenol	20 U	50 U	20 UJ	50 U	20 U	25 U	20 UJ	25 U
N-Nitrosodiphenylamine	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
4-Bromophenyl-phenylether	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Hexachlorobenzene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Pentachlorophenol	20 U	50 U	20 U	50 U	20 U	25 U	20 U	25 U
Phenanthrene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Anthracene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Carbazole	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Di-n-butylphthalate	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Fluoranthene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Pyrene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U

Table I-8

Table I
August 1996 Upper Aquifer Monitoring Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)							
	MW49		MW45		MW37		MW44	
	96ZB10S06 USEPA	PRP	96ZB10S07 USEPA	PRP	96ZB09S08 USEPA	PRP	96ZB09S09 USEPA	PRP
Butylbenzylphthalate	5 U	20 U	5 UJ	20 U	5 U	10 U	5 UJ	10 U
3,3'-Dichlorobenzidine	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Benzo(a)anthracene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Chrysene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
bis(2-Ethylhexyl)phthalate	3 BJ	20 U	2 BJ	20 U	2 BJ	10 U	3 BJ	10 U
Di-n-octylphthalate	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Benzo(b)fluoranthene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Benzo(k)fluoranthene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Benzo(a)pyrene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Indeno(1,2,3-cd)pyrene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Dibenzo(a,h)anthracene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
Benzo(g,h,i)perylene	5 U	20 U	5 U	20 U	5 U	10 U	5 U	10 U
SVOA TICs	15	16	16	11	0	0	0	0
Pesticides								
Alpha-BHC	0.01 U	-	0.01 U	-	0.01 U	-	0.01 U	-
Lindane	0.01 U	-	0.01 U	-	0.01 U	-	0.01 U	-
Heptachlor	0.01 U	-	0.01 U	-	0.01 U	-	0.01 U	-
Aldrin	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U	--
Heptachlor Epoxide	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U	--
Endosulfan I	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U	--
Dieldrin	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
Endrin	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
Endosulfan II	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
p,p'-DDT	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
Methoxychlor	0.1 U	--	0.1 U	--	0.1 U	--	0.1 U	--
Beta-BHC	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U	--
Delta-BHC	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U	--
Gamma-chlordane	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U	--
Alpha-chlordane	0.01 U	--	0.01 U	--	0.01 U	--	0.01 U	--
p,p'-DDE	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
p,p'-DDD	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
Endrin Aldehyde	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
Endosulfan Sulfate	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
Endrin Ketone	0.02 U	--	0.02 U	--	0.02 U	--	0.02 U	--
Technical Chlordane	0.2 U	--	0.2 U	--	0.2 U	--	0.2 U	--
Toxaphene	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--
PCBs								
Aroclor 1016	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Aroclor 1221	0.2 U	2.0 U	0.2 U	2.0 U	0.2 U	2.0 U	0.2 U	2.0 U
Aroclor 1232	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U

Table 1-9

Table 1
August 1996 Upper Aquifer Monitoring Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)							
	MW49		MW45		MW37		MW44	
	96ZB10S06 USEPA	PRP	96ZB10S07 USEPA	PRP	96ZB09S08 USEPA	PRP	96ZB09S09 USEPA	PRP
Aroclor 1242	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Aroclor 1248	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Aroclor 1254	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Aroclor 1260	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U	0.2 U	1.0 U
Inorganic Analytes								
Aluminum	80 U	110 UB	170	776	461	1,410	80 U	175 UB
Antimony	1 U	2.0 U	1 U	2.0 U	1 U	2.0 U	1 U	2.0 U
Arsenic	23	24.5	25	21.5	2 U	1.0 U	4	6.0 BS
Barium	102	96.5 B	89.7	84.5 B	22.2	23.5 B	115	106 B
Beryllium	1 U	0.20 U	1 U	0.20 U	1 U	0.26 B	1 U	0.20 U
Cadmium	0.2	0.20 U	0.2 U	0.20 U	0.4	0.47 B	0.2 U	0.20 U
Calcium	82,400	81,200	95,300	97,100	34,500	34,300	90,300	90,500
Chromium	10.5 J	10.0 U	10 U	29.0	10 U	10.0 U	10 U	10.0 U
Cobalt	6 U	10.0 U	6 U	10.0 U	6.9	10.0 U	6 U	10.0 U
Copper	6 U	11.0 UB	6 U	21.0 UB	9.9	20.5 UB	7.2	15.5 UB
Iron	19,800	20,100 J*	8,460	9,570 J*	762	1,240 UJ*	1,470	1,480 UJ*
Lead	5	1.5 U	9	38.5 S	8	8.6 US	4	1.5 U
Magnesium	10,600	10,700	23,800	27,500	9,020	9,160	36,900	37,200
Manganese	1,970	1,950 JE*	613	641 JE*	277	273 JE*	44.8	38.5 JE*
Mercury	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U
Nickel	20.3	20.0 UJ*	20 U	35.0 UJB*	20 U	20.0 UJ*	20 U	23.0 UJB*
Potassium	5,000 U	3,760 B	6,950	5,350	5,000 U	1,500 B	5,000 U	990 B
Selenium	4 U	2.0 U	8 U	2.0 U	2 U	2.0 U	2 U	2.0 U
Silver	6 U	10.0 U	6 U	10.0 U	6 U	10.0 U	6 U	10.0 U
Sodium	23,100	21,300	72,500	70,900	6,130	5,460	20,700	19,700
Thallium	2 U	1.0 U	2 U	1.0 U	2 U	1.0 U	2 U	1.0 U
Vanadium	5 U	20.0 U	5 U	20.0 U	5 U	20.0 U	5 U	20.0 U
Zinc	40 U	10.0 U	40 U	15.0 UB	40 U	10.0 U	40 U	10.0 U
Cyanide	8 U	--	8 U	--	8 U	--	8 U	--

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Table 2
Relative Percent Difference Comparison
August 1996 Upper Aquifer Monitoring Well Sample Data Comparison
American Chemical Services, Inc.

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)														
	MW46			MW48			MW38			MW47			MW44		
	96ZB10S01 USEPA	PRP	%RPD	96ZB10S02 USEPA	PRP	%RPD	96ZB10S03 USEPA	PRP	%RPD	96ZB10S04 USEPA	PRP	%RPD	96ZB10S09 USEPA	PRP	%RPD
Volatile Organic Compounds															
Methylene chloride	--	--	--	4	70 J	178%	--	--	--	--	--	--	--	--	--
Benzene	2	0.8 J	86%	--	--	--	--	--	--	2	1 U	67%	--	--	--
4-Methyl-2-pentanone	2 U	3 J	40%	--	--	--	--	--	--	--	--	--	--	--	--
Semivolatile Organic Compounds															
Phenol	--	--	--	180 D	110	48%	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	2 BJ	3 J	40%	--	--	--	--	--	--	--	--	--	--	--	--
Inorganic Analytes															
Aluminum	583	821	34%	355	254 U	33%	--	--	--	--	--	--	--	--	--
Arsenic	2	3.7 B	60%	6	11.3	61%	2	3.9 B	64%	--	--	--	4	6.0 BS	40%
Barium	--	--	--	--	--	--	--	--	--	6	10.0 B	50%	--	--	--
Lead	--	--	--	--	--	--	3	1.5 U	67%	--	--	--	4	1.5 U	91%

Compound/Analyte	Sample Location/Concentration ($\mu\text{g/l}$)											
	MW42			MW49			MW45			MW37		
	96ZB10S05 USEPA	PRP	%RPD	96ZB10S06 USEPA	PRP	%RPD	96ZB10S07 USEPA	PRP	%RPD	96ZB10S08 USEPA	PRP	%RPD
Volatile Organic Compounds												
Methylene chloride	--	--	--	1	70 UJ	194%	--	--	--	--	--	--
Benzene	2	1 U	67%	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	--	--	--	--	--	--	--	--	--	--	--	--
Semivolatile Organic Compounds												
Phenol	21	10 U	71%	59	93	45%	24	41	52%	--	--	--
Naphthalene	--	--	--	--	--	--	52	84	47%	--	--	--
Inorganic Analytes												
Aluminum	223	808	113%	--	--	--	170	776	128%	461	1,410	101%
Lead	--	--	--	5	1.5 U	108%	9	38.5 S	124%	--	--	--

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